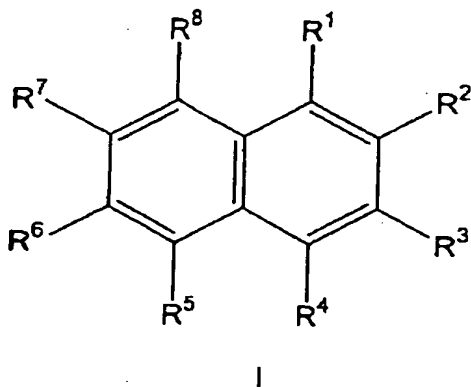


Patent claims:

1. Substituted 1- and 2-naphthol Mannich bases of the general formula I

5



wherein

$R^1 = \text{CH}(R^9)\text{N}(R^{10})(R^{11})$ and $R^2 = \text{OR}^{12}$

10

or

$R^1 = \text{OR}^{12}$ and $R^2 = \text{CH}(R^9)\text{N}(R^{10})(R^{11})$,

15

and in each case the radicals

R^3 to R^8 are identical or different and = H, F, Cl, Br, CF_3 , CN, NO_2 , SO_2NH_2 , $\text{SO}_2\text{NHR}^{13}$, NHR^{13} , SR^{15} , OR^{16} , $\text{CO}(\text{OR}^{20})$, $\text{CH}_2\text{CO}(\text{OR}^{21})$, $\text{CO}(\text{R}^{22})$, a C_{1-10} -alkyl, an aryl or a heteroaryl radical or an aryl or heteroaryl radical bonded via a C_{1-6} -alkylene group,

20

R^9 denotes an aryl radical, a heteroaryl radical or an alkyl radical without an acid proton in the α -position,

5 R^{10} , R^{11} are identical or different and denote a branched or unbranched, saturated or unsaturated, unsubstituted or at least monosubstituted C_{1-6} -alkyl radical or an unsubstituted or at least monosubstituted phenyl, benzyl or phenethyl radical,

10 or R^{10} and R^{11} together denote $(CH_2)_2O(CH_2)_2$ or $(CH_2)_n$, where n = an integer from 3 to 6

$R^{12} = H$, COR^{22} , a C_{1-10} -alkyl, an aryl or a heteroaryl radical or an aryl or heteroaryl radical bonded via a C_{1-6} -alkylene group,

15

$R^{13} = H$, COR^{14} , a C_{1-10} -alkyl, an aryl or a heteroaryl radical or an aryl or heteroaryl radical bonded via a C_{1-6} -alkylene group,

20

$R^{14} = H$, a C_{1-10} -alkyl, an aryl or a heteroaryl radical or an aryl or heteroaryl radical bonded via a C_{1-6} -alkylene group,

25

$R^{15} = H$, a C_{1-10} -alkyl, an aryl or a heteroaryl radical or an aryl or heteroaryl radical bonded via a C_{1-6} -alkylene group,

30 $R^{16} = H$, $CO(R^{17})$, a C_{1-10} -alkyl, an aryl or a heteroaryl radical or an aryl or heteroaryl radical bonded via a C_{1-6} -alkylene group,

$R^{17} = H$, a C_{1-10} -alkyl, an aryl or a heteroaryl radical or an aryl or heteroaryl radical bonded via a C_{1-6} -alkylene group,

5

$R^{18} = H$, a C_{1-10} -alkyl, an aryl or a heteroaryl radical or an aryl or heteroaryl radical bonded via a C_{1-6} -alkylene group,

10

$R^{20} = H$, a C_{1-10} -alkyl, an aryl or a heteroaryl radical or an aryl or heteroaryl radical bonded via a C_{1-6} -alkylene group,

15

$R^{21} = H$, a C_{1-10} -alkyl, an aryl or a heteroaryl radical or an aryl or heteroaryl radical bonded via a C_{1-6} -alkylene group,

20

$R^{22} = H$, $NHNH_2$, NHR^{18} , a C_{1-10} -alkyl, an aryl or a heteroaryl radical or an aryl or heteroaryl radical bonded via a C_{1-6} -alkylene group,

25

and/or their racemates, enantiomers, diastereomers and/or corresponding bases and/or corresponding salts of physiologically tolerated acids,

excluding

the racemates of the compounds in which the radical $R^1 = CH(R^9)N(R^{10})(R^{11})$ and $R^2 = OR^{12}$ and in each case

30

the radicals R^3 to R^8 and $R^{12} = H$, the radical $R^9 =$ phenyl, 2-chlorophenyl, 4-methoxyphenyl, 3-

fluorophenyl, 3-chlorophenyl, 3-bromophenyl, 4-bromophenyl, 2-fluorophenyl, 2-bromophenyl, benzo-1,3-dioxole, 4-CH₃OCO-phenyl or 2-methoxyphenyl and the radicals R¹⁰ and R¹¹ together = (CH₂)₅

5

or

the radicals R³ to R⁸ and R¹² = H, the radical R⁹ = phenyl, 4-methoxyphenyl, 4-dimethylaminophenyl, 4-hydroxy-2,3-di-tert-butylphenyl, 2,3-dihydrobenzodioxane, 4-nitrophenyl or benzo-1,3-dioxole and the radicals R¹⁰ and R¹¹ together = (CH₂)₂O(CH₂)₂

10

15

or

the radicals R³ to R⁸ and R¹² = H, the radical R⁹ = 4-methoxyphenyl and the radicals R¹⁰ and R¹¹ together = (CH₂)₄

20

or

the radical R³ = CO(OR²⁰), the radicals R⁴ to R⁸ and R¹² = H, the radical R⁹ = phenyl, 4-methoxyphenyl, 4-methylphenyl, 4-nitrophenyl or p-benzaldehyde, the radicals R¹⁰ and R¹¹ together = (CH₂)₅ and the radical R²⁰ = CH₃

25

or

30

the radicals R^3 to R^8 and $R^{12} = H$, the radical $R^9 =$
phenyl and the two radicals R^{10} and R^{11} each = CH_3 , C_2H_5
or $n-C_3H_7$

5 or

the radicals R^3 to R^8 and $R^{12} = H$, the radical $R^9 = 4-$
methoxyphenyl or benzo-1,3-dioxole and the radicals R^{10}
and R^{11} each = CH_3

10

or

the radicals R^3 to R^5 , R^7 , R^8 , $R^{12} = H$, the radical $R^6 =$
Br, the radical $R^9 =$ phenyl and the radicals R^{10} and R^{11}
together = $(CH_2)_5$

15

or

the radicals R^3 to R^5 , R^7 , R^8 , $R^{12} = H$, the radical $R^6 =$
Br, the radical $R^9 = 4$ -hydroxy-3,5-di-tert-butylphenyl
and the radicals R^{10} and R^{11} together = $(CH_2)_2O(CH_2)_2$

20

or

the radicals R^3 to R^8 and $R^{12} = H$, the radical $R^9 =$
phenyl and the radicals R^{10} and R^{11} each = CH_3 as the
hydrochloride

25

or

30

the radicals R^3 to R^8 and $R^{12} = H$, the radical $R^9 =$ phenyl or 4-methoxyphenyl and the radicals R^{10} and R^{11} together = $(CH_2)_5$ as the hydrochloride

5 or

the radical $R^3 = CO(OR^{20})$, the radicals R^4 to R^8 and $R^{12} = H$, the radical $R^9 =$ phenyl, the radicals R^{10} and R^{11} together = $(CH_2)_5$ and the radical $R^{20} = CH_3$ as the
10 hydrochloride

or

the radicals R^3 to R^8 and $R^{12} = H$, the radical $R^9 =$
15 thiophene and the radicals R^{10} and R^{11} together = $(CH_2)_2O(CH_2)_2$

or

20 the radicals R^3 to $R^8 = H$, the radical $R^{12} = CH_3$, the radical $R^9 =$ thiophene, 4-methoxyphenyl or 3,4-dimethoxyphenyl and the radicals R^{10} and R^{11} together = $(CH_2)_2O(CH_2)_2$

25 and the enantiomers of the compound of the general formula I in which $R^1 = CH(R^9)N(R^{10})(R^{11})$ and $R^2 = OR^{12}$ and the radicals R^3 to R^8 , $R^{12} = H$, $R^9 =$ phenyl and R^{10} and R^{11} together = $(CH_2)_5$

30 and

the racemates of the compounds in which the radicals R^1
 $= OR^{12}$ and $R^2 = CH(R^9)N(R^{10})(R^{11})$ and in each case the
 radicals

5 R^3 to R^8 and $R^{12} = H$, the radical $R^9 =$ phenyl, 2-
 bromophenyl, 3-bromophenyl or 4-bromophenyl and the
 radicals R^{10} and R^{11} together $= (CH_2)_5$

or

10 R^3 to R^8 and $R^{12} = H$, the radical $R^9 =$ phenyl or 2-
 nitrophenyl and the radicals R^{10} and R^{11} together $=$
 $(CH_2)_2O(CH_2)_2$

or

15 R^3 , R^4 , R^6 , R^8 and $R^{12} = H$, the radicals R^5 , $R^7 = CH_3$,
 the radical $R^9 =$ phenyl or 4-methoxyphenyl and the
 radicals R^{10} and R^{11} together $= (CH_2)_5$

or

20 R^3 to R^6 , R^8 , $R^{12} = H$, the radical $R^7 = CH_3$, the radical
 $R^9 =$ 4-methoxyphenyl or phenyl and the radicals R^{10} , R^{11}
 together $= (CH_2)_5$

or

25 R^3 to R^8 and $R^{12} = H$, the radical $R^9 =$ phenyl, the
 radical $R^{10} = CH_3$ and the radical $R^{11} = C_6H_{11}$ or the
 radicals R^{10} and R^{11} each $= CH_3$

or

R^3 to R^6 , R^8 , $R^{12} = H$, the radical $R^7 = CH_3$, the radical $R^9 = \text{phenyl or 4-methoxyphenyl}$ and the radicals R^{10} and R^{11} together $= (CH_2)_2O(CH_2)_2$

5

or

R^3 , R^4 , R^6 , R^8 , $R^{12} = H$, the radicals R^5 and $R^7 = CH_3$, the radical $R^9 = \text{4-methoxyphenyl}$ and the radicals R^{10} and R^{11} together $= (CH_2)_2O(CH_2)_2$

10

or

R^3 to R^8 , $R^{12} = H$, the radical $R^9 = \text{phenyl}$ and the radicals R^{10} and R^{11} together $= (CH_2)_2O(CH_2)_2$ as the hydrochloride.

15

2. Substituted 1- and 2-naphthol Mannich bases according to claim 1, characterized in that at least one of the radicals R^3 , R^4 , R^5 , R^6 , R^7 or R^8 represents H and the other radicals R^3 , R^4 , R^5 , R^6 , R^7 or R^8 , R^9 to R^{18} and R^{20} to R^{22} have the meaning according to claim 1.

20

3. Substituted 1- and 2-naphthol Mannich bases according to claim 1, characterized in that at least one of the radicals R^3 , R^4 , R^5 , R^6 , R^7 or R^8 represents a C_{1-6} -alkyl radical and the other radicals R^3 , R^4 , R^5 , R^6 , R^7 or R^8 , R^9 to R^{18} and R^{20} to R^{22} have the meaning according to claim 1.

25

30

4. Substituted 1- and 2-naphthol Mannich bases according to claim 1, characterized in that at least one of the

radicals R^3 , R^4 , R^5 , R^6 , R^7 or R^8 represents an aryl radical bonded via a C_{1-2} -alkylene group and the other radicals R^3 , R^4 , R^5 , R^6 , R^7 or R^8 , R^9 to R^{18} and R^{20} to R^{22} have the meaning according to claim 1.

5

5. Substituted 1- and 2-naphthol Mannich bases according to claim 1, characterized in that at least one of the radicals R^3 , R^4 , R^5 , R^6 , R^7 or R^8 represents F, Cl or Br and the other radicals R^3 , R^4 , R^5 , R^6 , R^7 or R^8 , R^9 to R^{18} and R^{20} to R^{22} have the meaning according to claim 1.

10

6. Substituted 1- and 2-naphthol Mannich bases according to claim 1, characterized in that at least one of the radicals R^3 , R^4 , R^5 , R^6 , R^7 or R^8 represents SO_2NH_2 and the other radicals R^3 , R^4 , R^5 , R^6 , R^7 or R^8 , R^9 to R^{18} and R^{20} to R^{22} have the meaning according to claim 1.

15

7. Substituted 1- and 2-naphthol Mannich bases according to claim 1, characterized in that at least one of the radicals R^3 , R^4 , R^5 , R^6 , R^7 or R^8 represents NHR^{13} and the other radicals R^3 , R^4 , R^5 , R^6 , R^7 or R^8 , R^9 to R^{18} and R^{20} to R^{22} have the meaning according to claim 1.

20

8. Substituted 1- and 2-naphthol Mannich bases according to claim 1, characterized in that at least one of the radicals R^3 , R^4 , R^5 , R^6 , R^7 or R^8 represents $CO(R^{22})$ and the other radicals R^3 , R^4 , R^5 , R^6 , R^7 or R^8 , R^9 to R^{18} and R^{20} to R^{22} have the meaning according to claim 1.

25
30

9. Substituted 1- and 2-naphthol Mannich bases according to claim 1, characterized in that at least one of the

radicals R^3 , R^4 , R^5 , R^6 , R^7 or R^8 represents OR^{16} and the other radicals R^3 , R^4 , R^5 , R^6 , R^7 or R^8 , R^9 to R^{18} and R^{20} to R^{22} have the meaning according to claim 1.

- 5 10. Substituted 1- and 2-naphthol Mannich bases according to claim 1, characterized in that at least one of the radicals R^3 , R^4 , R^5 , R^6 , R^7 or R^8 represents $CO(OR^{20})$ and the other radicals R^3 , R^4 , R^5 , R^6 , R^7 or R^8 , R^9 to R^{18} and R^{20} to R^{22} have the meaning according to claim 1.
- 10 11. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 10, characterized in that the radical R^9 denotes an unsubstituted phenyl radical or a phenyl radical which is at least monosubstituted by
 - 15 C_{1-4} -alkyl, C_{1-3} -alkoxy, halogen, CF_3 , CN, O-phenyl or OH, preferably an unsubstituted phenyl radical or a 2-methoxy-phenyl, 3-methoxy-phenyl, 4-methoxy-phenyl, 2-methyl-phenyl, 3-methyl-phenyl, 4-methyl-phenyl, 2-tert-butyl-phenyl, 3-tert-butyl-phenyl, 4-tert-butyl-phenyl, 2-fluoro-phenyl, 3-fluoro-phenyl, 4-fluoro-phenyl, 2-chloro-phenyl, 3-chloro-phenyl, 4-chloro-phenyl, 2-bromo-phenyl, 3-bromo-phenyl, 4-bromo-phenyl, 5-bromo-2-fluoro-phenyl, 2-chloro-4-fluoro-phenyl, 2-chloro-5-fluoro-phenyl, 2-chloro-6-fluoro-phenyl, 4-bromo-2-fluoro-phenyl, 3-bromo-4-fluoro-phenyl, 3-bromo-2-fluoro-phenyl, 2,3-dichloro-phenyl, 2,4-dichloro-phenyl, 2,5-dichlorophenyl, 3,4-dichloro-phenyl, 2,3-dimethyl-phenyl, 2,4-dimethyl-phenyl, 2,5-dimethylphenyl, 2,3-dimethoxy-phenyl, 2,4-dimethoxy-phenyl, 2,5-dimethoxy-phenyl, 3,4-dimethoxy-phenyl, 3,4,5-trimethoxy-phenyl, 2-trifluoromethyl-phenyl, 3-trifluoromethyl-phenyl or 4-trifluoromethyl-phenyl

radical, particularly preferably an unsubstituted phenyl radical, and the radicals R^{10} to R^{18} and R^{20} to R^{22} have the meaning according to claim 1.

- 5 12. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 11, characterized in that at least one of the radicals R^{10} or R^{11} represents a saturated, unsubstituted or at least monosubstituted C_{1-6} -alkyl radical, preferably a CH_3 radical, and the
10 other particular radical R^{10} or R^{11} and the radicals R^{12} to R^{18} and R^{20} to R^{22} have the meaning according to claim 1.
13. Substituted 1- and 2-naphthol Mannich bases according
15 to one of claims 1 to 11, characterized in that the radicals R^{10} and R^{11} together denote $(CH_2)_n$, where $n = 4$ or 5, and the radicals R^{12} to R^{18} and R^{20} to R^{22} have the meaning according to claim 1.
- 20 14. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 13, characterized in that the radical R^{12} represents H and the radicals R^{13} to R^{18} and R^{20} to R^{22} have the meaning according to claim 1.
- 25 15. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 13, characterized in that the radical R^{12} represents a C_{1-6} -alkyl radical and the radicals R^{13} to R^{18} and R^{20} to R^{22} have the meaning according to claim 1.
- 30 16. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 13, characterized in that the

radical R^{12} represents an aryl radical bonded via a C_{1-2} -alkylene group and the radicals R^{13} to R^{18} and R^{20} to R^{22} have the meaning according to claim 1.

- 5 17. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 16, characterized in that the radical R^{13} represents H and the radicals R^{14} to R^{18} and R^{20} to R^{22} have the meaning according to claim 1.
- 10 18. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 16, characterized in that the radical R^{13} represents a C_{1-6} -alkyl radical and the radicals R^{14} to R^{18} and R^{20} to R^{22} have the meaning according to claim 1.
- 15 19. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 16, characterized in that the radical R^{13} represents an aryl radical bonded via a C_{1-2} -alkylene group and the radicals R^{14} to R^{18} and R^{20} to R^{22} have the meaning according to claim 1.
- 20 20. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 19, characterized in that the radical R^{14} represents a C_{1-6} -alkyl radical and the radicals R^{15} to R^{18} and R^{20} to R^{22} have the meaning according to claim 1.
- 25 21. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 19, characterized in that the radical R^{14} represents an aryl radical bonded via a C_{1-2} -alkylene group and the radicals R^{15} to R^{18} and R^{20} to R^{22} have the meaning according to claim 1.
- 30

22. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 21, characterized in that the radical R^{15} represents a C_{1-6} -alkyl radical and the radicals R^{16} to R^{18} and R^{20} to R^{22} have the meaning according to claim 1.
23. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 21, characterized in that the radical R^{15} represents an aryl radical bonded via a C_{1-2} -alkylene group and the radicals R^{16} to R^{18} and R^{20} to R^{22} have the meaning according to claim 1.
24. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 23, characterized in that the radical R^{16} represents a C_{1-6} -alkyl radical and the radicals R^{17} , R^{18} and R^{20} to R^{22} have the meaning according to claim 1.
25. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 23, characterized in that the radical R^{16} represents an aryl radical bonded via a C_{1-2} -alkylene group and the radicals R^{17} , R^{18} and R^{20} to R^{22} have the meaning according to claim 1.
26. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 23, characterized in that the radical R^{16} represents H and the radicals R^{17} , R^{18} and R^{20} to R^{22} have the meaning according to claim 1.
27. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 23, characterized in that the

radical R^{16} represents $CO(R^{17})$ and the radicals R^{17} , R^{18} and R^{20} to R^{22} have the meaning according to claim 1.

- 5 28. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 27, characterized in that the radical R^{17} represents a C_{1-6} -alkyl radical and the radicals R^{18} and R^{20} to R^{22} have the meaning according to claim 1.
- 10 29. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 27, characterized in that the radical R^{17} represents an aryl radical bonded via a C_{1-2} -alkylene group and the radicals R^{18} and R^{20} to R^{22} have the meaning according to claim 1.
- 15 30. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 27, characterized in that the radical R^{17} represents a phenyl radical which is optionally substituted by F, Cl, Br, C_{1-4} -alkyl or C_{1-3} -alkoxy and the radicals R^{18} and R^{20} to R^{22} have the meaning according to claim 1.
- 20 31. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 30, characterized in that the radical R^{18} represents a C_{1-6} -alkyl radical and the radicals R^{20} to R^{22} have the meaning according to claim 1.
- 25 32. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 30, characterized in that the radical R^{18} represents an aryl radical bonded via a
- 30

C₁₋₂-alkylene group and the radicals R²⁰ to R²² have the meaning according to claim 1.

- 5 33. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 30, characterized in that the radical R¹⁸ represents a phenyl or naphthyl radical which is optionally substituted by F, Cl, Br, C₁₋₄-alkyl or C₁₋₃-alkoxy, preferably a phenyl radical which is optionally substituted by F, Cl, Br, C₁₋₄-alkyl or C₁₋₃-alkoxy, and the radicals R²⁰ to R²² have the meaning according to claim 1.
- 10
- 15 34. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 33, characterized in that the radical R²⁰ represents a C₁₋₆-alkyl radical and the radicals R²¹ and R²² have the meaning according to claim 1.
- 20 35. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 33, characterized in that the radical R²⁰ represents an aryl radical bonded via a C₁₋₂-alkylene group and the radicals R²¹ and R²² have the meaning according to claim 1.
- 25 36. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 33, characterized in that the radical R²⁰ represents H and the radicals R²¹ and R²² have the meaning according to claim 1.
- 30 37. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 33, characterized in that the radical R²⁰ represents a phenyl radical which is

optionally substituted by F, Cl, Br, C₁₋₄-alkyl or C₁₋₃-alkoxy and the radicals R²¹ and R²² have the meaning according to claim 1.

- 5 38. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 37, characterized in that the radical R²¹ represents H and the radical R²² has the meaning according to claim 1.
- 10 39. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 37, characterized in that the radical R²¹ represents a C₁₋₆-alkyl radical and the radical R²² has the meaning according to claim 1.
- 15 40. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 37, characterized in that the radical R²¹ represents an aryl radical bonded via a C₁₋₂-alkylene group and the radical R²² has the meaning according to claim 1.
- 20 41. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 40, characterized in that the radical R²² represents H.
- 25 42. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 40, characterized in that the radical R²² represents a C₁₋₆-alkyl radical.
- 30 43. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 40, characterized in that the radical R²² represents an aryl radical bonded via a C₁₋₂-alkylene group.

44. Substituted 1- and 2-naphthol Mannich bases according to one of claims 1 to 40, characterized in that the radical R^{22} represents $NHNNH_2$, NHR^{18} or a phenyl radical which is optionally substituted by F, Cl, Br, C_{1-4} -alkyl or C_{1-3} -alkoxy, preferably $NHNNH_2$ or NHR^{18} .
45. Substituted 1- and 2-naphthol Mannich bases according to claim 1:
- 6-(dimethylaminophenylmethyl)-5-hydroxy-naphthalene-1-sulfonic acid amide
- 4-amino-2-(dimethylaminophenylmethyl)-naphthalen-1-ol
- 4-(dimethylaminophenylmethyl)-3-hydroxy-naphthalene-2-carboxylic acid hydrazide
- 4-(dimethylaminophenylmethyl)-3-hydroxy-naphthalene-2-carboxylic acid methyl ester
- 4-(dimethylamino-phenyl-methyl)-3-hydroxy-naphthalene-2-carboxylic acid
- 4-(dimethylaminophenylmethyl)-3-hydroxy-naphthalene-2-carboxylic acid phenyl ester
- [5-(dimethylaminophenylmethyl)-6-hydroxynaphthalen-2-yl]-phenylmethanone
- 3-amino-1-(dimethylaminophenylmethyl)-naphthalen-2-ol

- 4-(dimethylaminophenylmethyl)-3-hydroxynaphthalene-2-carboxylic acid (2-methoxy-phenyl)-amide
- 5 4-(dimethylaminophenylmethyl)-3-hydroxy-naphthalene-2-carboxylic acid o-tolylamide
- 4-(dimethylaminophenylmethyl)-3-hydroxynaphthalene-2-carboxylic acid naphthalen-1-ylamide
- 10 4-(dimethylaminophenylmethyl)-3-hydroxy-7-methoxynaphthalene-2-carboxylic acid
- 5-(dimethylaminophenylmethyl)-6-hydroxynaphthalene-2-carboxylic acid
- 15 1-(dimethylaminophenylmethyl)-7-methoxynaphthalen-2-ol
- 1-(dimethylaminophenylmethyl)-6-methoxynaphthalen-2-ol
- 20 5-(dimethylaminophenylmethyl)-6-hydroxynaphthalene-1-carboxylic acid
- 4-(dimethylaminophenylmethyl)-3-hydroxy-7-methoxynaphthalene-2-carboxylate sodium salt
- 25 4-chloro-2-(morpholin-4-yl-o-tolylmethyl)-naphthalen-1-ol
- 4-chloro-2-(piperidin-1-yl-o-tolylmethyl)-naphthalen-1-ol
- 30

4-chloro-2-[(2-chlorophenyl)-piperidin-1-yl-methyl]-
naphthalen-1-ol

5 4-chloro-2-[(2,3-dimethoxyphenyl)-morpholin-4-yl-
methyl]-naphthalen-1-ol

5-amino-2-[(2-chlorophenyl)-piperidin-1-yl-methyl]-
naphthalen-1-ol

10 5-amino-2-[(2,3-dimethoxyphenyl)-morpholin-4-yl-
methyl]-naphthalen-1-ol

3-hydroxy-4-(piperidin-1-yl-o-tolylmethyl)-
naphthalene-2-carboxylic acid hydrazide

15 7-methoxy-1-(morpholin-4-yl-o-tolylmethyl)-naphthalen-
2-ol

20 1-[(2-chlorophenyl)-piperidin-1-yl-methyl]-7-
methoxynaphthalen-2-ol

1-[(2,3-dimethoxyphenyl)-morpholin-4-yl-methyl]-7-
methoxynaphthalen-2-ol

25 6-bromo-1-[(2-methoxyphenyl)-morpholin-4-yl-methyl]-
naphthalen-2-ol

6-hydroxy-5-[(2-methoxyphenyl)-morpholin-4-yl-methyl]-
naphthalene-1-carboxylic acid

30 7-methoxy-1-[(2-methoxyphenyl)-morpholin-4-yl-methyl]-
naphthalen-2-ol

6-methoxy-1-[(2-methoxyphenyl)-morpholin-4-yl-methyl]-
naphthalen-2-ol

5 4-chloro-2-[(2-methoxyphenyl)-piperidin-1-yl-methyl]-
naphthalen-1-ol

6-bromo-1-[(2-methoxyphenyl)-piperidin-1-yl-methyl]-
naphthalen-1-ol

10 6-methoxy-1-[(2-methoxyphenyl)-piperidin-1-yl-methyl]-
naphthalen-2-ol

15 7-methoxy-1-[(2-methoxyphenyl)-piperidin-1-yl-methyl]-
naphthalen-2-ol

5-chloro-2-[dimethylamino-(2-methoxyphenyl)-methyl]-
naphthalen-1-ol

20 {[1-(4-methoxybenzyloxy)-naphthalen-2-yl]-
phenylmethyl}-dimethylamine

{[2-(4-methoxybenzyloxy)-naphthalen-1-yl]-
phenylmethyl}-dimethylamine

25 4-methoxybenzoic acid 1-(dimethylaminophenylmethyl)-
naphthalen-2-yl ester

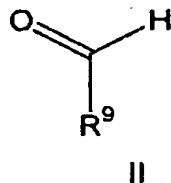
30 2-chlorobenzoic acid 1-(dimethylaminophenylmethyl)-
naphthalen-2-yl ester

1-(morpholin-4-yl-phenylmethyl)-naphthalen-2-ol

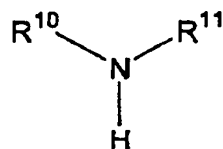
1-(phenylpiperidin-1-yl-methyl)-naphthalen-2-ol

2-[(4-fluoro-phenyl)-pyrrolidin-1-yl-methyl]-
naphthalen-1-ol.

46. Process for the preparation of substituted 1- and 2-naphthol Mannich bases of the general formula I according to one of claims 1 to 45, in which the radical R^{12} represents H and the radicals R^1 to R^{11} , R^{13} to R^{18} and R^{20} to R^{22} have the meaning according to the general formula I, characterized in that aromatic aldehyde compounds and/or heteroaromatic aldehyde compounds and/or aliphatic aldehyde compounds of the general formula II

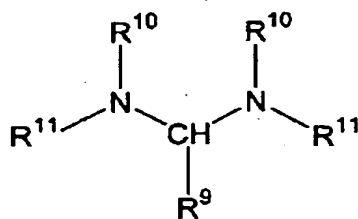


- in which R^9 has the meaning according to the general formula I, are reacted in solution in the presence of a base, preferably at a temperature of -10°C to $+110^{\circ}\text{C}$, with secondary amines of the general formula III



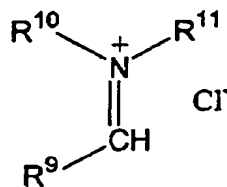
III

- 5 in which R^{10} and R^{11} have the meaning according to the general formula I,
to give aminal compounds of the general formula IV



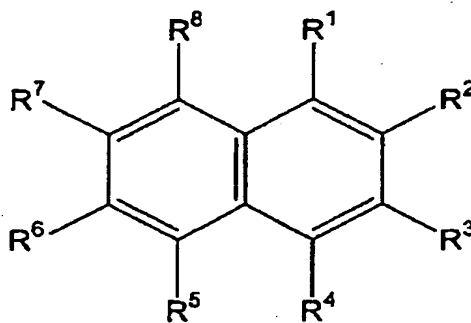
IV

- 10 and these aminal compounds of the general formula IV are reacted, without further purification, with an acid chloride in an absolute solvent to give iminium salts of the general formula V



V

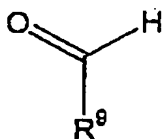
and these iminium salts of the general formula V are reacted, without further purification and in solution, preferably in acetonitrile, with substituted and/or unsubstituted 1- and 2-naphthol compounds of the general formula VI



VI

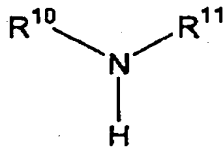
wherein $\text{R}^1 = \text{H}$ and $\text{R}^2 = \text{OH}$ or $\text{R}^1 = \text{OH}$ and $\text{R}^2 = \text{H}$ and in each case the radicals R^3 to R^8 , R^{13} to R^{18} and R^{20} to R^{22} have the meaning according to the general formula I, and the 1- and 2-naphthol Mannich bases of the general formula I obtained in this way in which the radical R^{12} represents H and the radicals R^1 to R^{11} , R^{13} to R^{18} and R^{20} to R^{22} have the meaning according to the general formula I are purified by extraction and are isolated by conventional methods.

47. Process for the preparation of substituted 1- and 2-naphthol Mannich bases of the general formula I according to one of claims 1 to 45 in which the radical $R^{12} = COR^{22}$, a C_{1-10} -alkyl, an aryl or a heteroaryl radical or an aryl or heteroaryl radical bonded via a C_{1-6} -alkylene group and the radicals R^1 to R^{11} , R^{13} to R^{18} and R^{20} to R^{22} have the meaning according to the general formula I, characterized in that aromatic aldehyde compounds and/or heteroaromatic aldehyde compounds and/or aliphatic aldehyde compounds of the general formula II



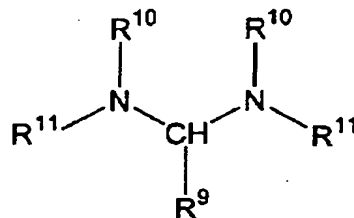
II

in which R^9 has the meaning according to the general formula I, are reacted in solution in the presence of a base, preferably at a temperature of -10 to $+110^\circ\text{C}$, with secondary amines of the general formula III



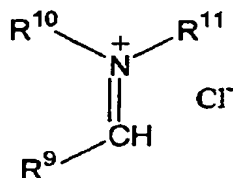
III

in which R^{10} and R^{11} have the meaning according to the general formula I, to give aminal compounds of the general formula IV



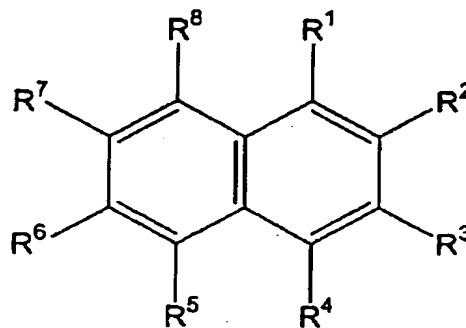
IV

and these aminal compounds of the general formula IV are reacted, without further purification, with an acid chloride in an absolute solvent to give iminium salts of the general formula V



V

and these iminium salts of the general formula V are reacted, without further purification and in solution, preferably in acetonitrile, with substituted and/or unsubstituted 1- and 2-naphthol compounds of the general formula VI



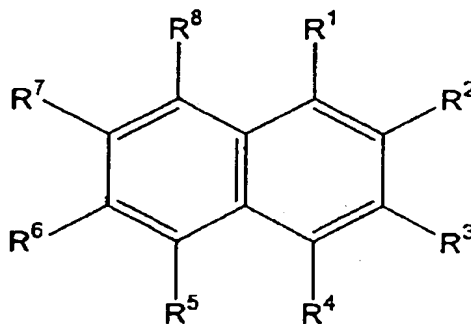
VI

wherein $R^1 = H$ and $R^2 = OH$ or $R^1 = OH$ and $R^2 = H$ and in
 5 each case the other radicals R^3 to R^8 , R^{13} to R^{18} and R^{20}
 to R^{22} in each case have the meaning according to the
 general formula I, and the compounds of the general
 formula VI obtained in this way, wherein $R^1 =$
 $CH(R^9)N(R^{10})(R^{11})$ and $R^2 = OH$ or $R^1 = OH$ and $R^2 =$
 10 $CH(R^9)N(R^{10})(R^{11})$ and the radicals R^3 to R^{11} , R^{13} to R^{18}
 and R^{20} to R^{22} have the meaning according to the general
 formula I, are reacted in solution with compounds of
 the general formula $XR^{12'}$, wherein $X = Cl, Br$ or I and
 $R^{12'}$ COR^{22} , a C_{1-10} -alkyl, an aryl or a heteroaryl
 15 radical or an aryl or heteroaryl radical bonded via a
 C_{1-6} -alkylene group, in the presence of a base at a
 temperature of preferably 10 to $150^\circ C$ and the 1- and
 2-naphthol Mannich bases of the general formula I
 obtained in this way, in which the radical R^{12}
 20 represents COR^{22} , a C_{1-10} -alkyl, an aryl or a heteroaryl
 radical or an aryl or heteroaryl radical bonded via a
 C_{1-6} -alkylene group and the radicals R^1 to R^{11} , R^{13} to R^{18}
 and R^{20} to R^{22} have the meaning according to the general
 formula I, are purified by filtration and are isolated
 25 by conventional methods.

48. Process according to claim 47, characterized in that the reaction with the compounds of the general formula $\text{XR}^{12'}$ is carried out in dimethylformamide.
- 5 49. Process according to claim 47 or 48, characterized in that $\text{X} = \text{Cl}$.
- 10 50. Process according to one of claims 47 to 49, characterized in that the reaction with the compounds of the general formula $\text{XR}^{12'}$ is carried out in the presence of triethylamine or potassium tert-butyrate as the base.
- 15 51. Process according to one of claims 47 to 50, characterized in that the compounds of the general formula I in which $\text{R}^{12} \neq \text{H}$, are purified by filtration over a scavenger resin, preferably by filtration over polymer-bonded tris(2-aminoethyl)amine and/or 3-(3-mercaptophenyl)propane-amidomethylpolystyrene.
- 20 52. Process according to one of claims 46 to 51, characterized in that the aromatic aldehyde compounds and/or heteroaromatic aldehyde compounds and/or
- 25 aliphatic aldehyde compounds of the general formula II are reacted in an organic solvent, preferably in toluene, with secondary amines of the general formula III.
- 30 53. Process according to one of claims 46 to 52, characterized in that the aromatic aldehyde compounds and/or heteroaromatic aldehyde compounds and/or

aliphatic aldehyde compounds of the general formula II are reacted in the presence of potassium carbonate or boric acid anhydride as the base.

- 5 54. Process according to one of claims 46 to 53, characterized in that the aminal compounds of the general formula IV are reacted with acetyl chloride to give iminium salts of the general formula V.
- 10 55. Process according to one of claims 46 to 54, characterized in that the aminal compounds of the general formula IV are reacted in absolute diethyl ether to give iminium salts of the general formula V.
- 15 56. Medicaments comprising, as the active compound, at least one substituted 1- and/or 2-naphthol Mannich base of the general formula I



I

wherein

20

$R^1 = CH(R^9)N(R^{10})(R^{11})$ and $R^2 = OR^{12}$

or

$R^1 = OR^{12}$ and $R^2 = CH(R^9)N(R^{10})(R^{11})$,

and in each case the radicals

5

R^3 to R^8 are identical or different and = H, F, Cl, Br, CF_3 , CN, NO_2 , SO_2NH_2 , SO_2NHR^{13} , NHR^{13} , SR^{15} , OR^{16} , $CO(OR^{20})$, $CH_2CO(OR^{21})$, $CO(R^{22})$, a C_{1-10} -alkyl, an aryl or a heteroaryl radical or an aryl or heteroaryl radical bonded via a C_{1-6} -alkylene group, preferably = H, F, Cl, Br, SO_2NH_2 , NHR^{13} , $CO(R^{22})$, OR^{16} , $CO(OR^{20})$, a C_{1-6} -alkyl radical or an aryl radical bonded via a C_{1-2} -alkylene group, particularly preferably H, NHR^{13} , $CO(R^{22})$, OR^{16} or $CO(OR^{20})$,

10

15

R^9 denotes an aryl radical, a heteroaryl radical or an alkyl radical without an acid proton in the α -position, preferably an unsubstituted phenyl radical or a phenyl radical which is at least monosubstituted by C_{1-4} -alkyl, C_{1-3} -alkoxy, halogen, CF_3 , CN, O-phenyl or OH, particularly preferably an unsubstituted phenyl radical or a 2-methoxy-phenyl, 3-methoxy-phenyl, 4-methoxy-phenyl, 2-methyl-phenyl, 3-methyl-phenyl, 4-methyl-phenyl, 2-tert-butyl-phenyl, 3-tert-butyl-phenyl, 4-tert-butyl-phenyl, 2-fluoro-phenyl, 3-fluoro-phenyl, 4-fluoro-phenyl, 2-chloro-phenyl, 3-chloro-phenyl, 4-chloro-phenyl, 2-bromo-phenyl, 3-bromo-phenyl, 4-bromo-phenyl, 5-bromo-2-fluoro-phenyl, 2-chloro-4-fluoro-phenyl, 2-chloro-5-fluoro-phenyl, 2-chloro-6-fluoro-phenyl, 4-bromo-2-fluoro-phenyl, 3-bromo-4-fluoro-phenyl, 3-bromo-2-fluoro-phenyl, 2,3-dichloro-phenyl, 2,4-dichloro-phenyl, 2,5-

20

25

30

dichlorophenyl, 3,4-dichlorophenyl, 2,3-dimethyl-phenyl, 2,4-dimethyl-phenyl, 2,5-dimethylphenyl, 2,3-dimethoxy-phenyl, 2,4-dimethoxy-phenyl, 2,5-dimethoxy-phenyl, 3,4-dimethoxy-phenyl, 3,4,5-trimethoxy-phenyl,
 5 2-trifluoromethyl-phenyl, 3-trifluoromethyl-phenyl or 4-trifluoromethyl-phenyl radical, very particularly preferably an unsubstituted phenyl radical,

R^{10} , R^{11} are identical or different and denote a
 10 branched or unbranched, saturated or unsaturated, unsubstituted or at least monosubstituted C_{1-6} -alkyl radical or an unsubstituted or at least monosubstituted phenyl, benzyl or phenethyl radical, preferably a saturated, unsubstituted or at least
 15 monosubstituted C_{1-6} -alkyl radical, particularly preferably a CH_3 radical,

or R^{10} and R^{11} together denote $(CH_2)_n$, where n = an integer from 3 to 6, or $(CH_2)_2O(CH_2)_2$, preferably
 20 $(CH_2)_n$, where n = 4 or 5,

$R^{12} = H$, COR^{22} , a C_{1-10} -alkyl, an aryl or a heteroaryl radical or an aryl or heteroaryl radical bonded via a C_{1-6} -alkylene group, preferably = H , a C_{1-6} -alkyl
 25 radical or an aryl radical bonded via a C_{1-2} -alkylene group,

$R^{13} = H$, COR^{14} , a C_{1-10} -alkyl, an aryl or a heteroaryl radical or an aryl or heteroaryl radical bonded via a C_{1-6} -alkylene group, preferably = H , a C_{1-6} -alkyl
 30 radical or an aryl radical bonded via a C_{1-2} -alkylene group, particularly preferably = H ,

5 $R^{14} = H$, a C_{1-10} -alkyl, an aryl or a heteroaryl radical or an aryl or heteroaryl radical bonded via a C_{1-6} -alkylene group, preferably a C_{1-6} -alkyl radical or an aryl radical bonded via a C_{1-2} -alkylene group,

10 $R^{15} = H$, a C_{1-10} -alkyl, an aryl or a heteroaryl radical or an aryl or heteroaryl radical bonded via a C_{1-6} -alkylene group, preferably a C_{1-6} -alkyl radical or an aryl radical bonded via a C_{1-2} -alkylene group,

15 $R^{16} = H$, $CO(R^{17})$, a C_{1-10} -alkyl, an aryl or a heteroaryl radical or an aryl or heteroaryl radical bonded via a C_{1-6} -alkylene group, preferably H , a C_{1-6} -alkyl radical, an aryl radical bonded via a C_{1-2} -alkylene group or $CO(R^{17})$, particularly preferably H or $CO(R^{17})$,

20 $R^{17} = H$, a C_{1-10} -alkyl, an aryl or a heteroaryl radical or an aryl or heteroaryl radical bonded via a C_{1-6} -alkylene group, preferably a C_{1-6} -alkyl radical, an aryl radical bonded via a C_{1-2} -alkylene group or a phenyl radical which is optionally substituted by F , Cl , Br , C_{1-4} -alkyl or C_{1-3} -alkoxy, particularly preferably a phenyl radical which is optionally substituted by F , Cl , Br , C_{1-4} -alkyl or C_{1-3} -alkoxy,

25

30 $R^{18} = H$, a C_{1-10} -alkyl, an aryl or a heteroaryl radical or an aryl or heteroaryl radical bonded via a C_{1-6} -alkylene group, preferably a C_{1-6} -alkyl radical, an aryl radical bonded via a C_{1-2} -alkylene group or a phenyl or naphthyl radical which is optionally substituted by F , Cl , Br , C_{1-4} -alkyl or C_{1-3} -alkoxy,

particularly preferably a phenyl radical which is optionally substituted by F, Cl, Br, C₁₋₄-alkyl or C₁₋₃-alkoxy,

5 R²⁰ = H, a C₁₋₁₀-alkyl, an aryl or a heteroaryl radical or an aryl or heteroaryl radical bonded via a C₁₋₆-alkylene group, preferably H, a C₁₋₆-alkyl radical, an aryl radical bonded via a C₁₋₂-alkylene group or a phenyl radical which is optionally substituted by F, Cl, Br, C₁₋₄-alkyl or C₁₋₃-alkoxy, particularly
10 preferably H or a phenyl radical which is optionally substituted by F, Cl, Br, C₁₋₄-alkyl or C₁₋₃-alkoxy,

15 R²¹ = H, a C₁₋₁₀-alkyl, an aryl or a heteroaryl radical or an aryl or heteroaryl radical bonded via a C₁₋₆-alkylene group, preferably = H, a C₁₋₆-alkyl radical or an aryl radical bonded via a C₁₋₂-alkylene group,

20 R²² = H, NHNH₂, NHR¹⁸, a C₁₋₁₀-alkyl, an aryl or a heteroaryl radical or an aryl or heteroaryl radical bonded via a C₁₋₆-alkylene group, preferably H, a C₁₋₆-alkyl radical, an aryl radical bonded via a C₁₋₂-alkylene group, NHNH₂, NHR¹⁸ or a phenyl radical which is optionally substituted by F, Cl, Br, C₁₋₄-alkyl or C₁₋₃-alkoxy, particularly preferably NHNH₂, NHR¹⁸ or a
25 phenyl radical which is optionally substituted by F, Cl, Br, C₁₋₄-alkyl or C₁₋₃-alkoxy, very particularly preferably NHNH₂ or NHR¹⁸,

30 and/or their racemates, enantiomers, diastereomers and/or corresponding bases and/or corresponding salts

of physiologically tolerated acids and optionally further active compounds and/or auxiliary substances.

57. Medicament according to claim 56, characterized in
5 that it comprises as the active compound a mixture of enantiomers of at least one substituted 1-naphthol Mannich base and/or 2-naphthol Mannich base of the general formula I, the mixture containing the enantiomers in non-equimolar amounts.
- 10 58. Medicament according to claim 57, characterized in that the relative proportion of one of the enantiomers of the mixture is 5 to 45 mol%, preferably 10 to 40 mol%, based on the mixture of enantiomers.
- 15 59. Medicament according to one of claims 56 to 58 for treatment of/combating pain and/or inflammatory reactions and/or allergic reactions and/or drug abuse and/or alcohol abuse and/or diarrhoea and/or gastritis
20 and/or ulcers and/or cardiovascular diseases and/or urinary incontinence and/or depression and/or states of shock and/or migraines and/or narcolepsy and/or excess weight and/or asthma and/or glaucoma and/or hyperkinetic syndrome.
- 25 60. Use of at least one compound of the general formula I according to claims 1 to 45 for the preparation of a medicament for combating pain.
- 30 61. Use of at least one compound of the general formula I according to claims 1 to 45 for the preparation of a medicament for treatment of inflammatory reactions.

62. Use of at least one compound of the general formula I according to claims 1 to 45 for the preparation of a medicament for treatment of allergic reactions.
- 5 63. Use of at least one compound of the general formula I according to claims 1 to 45 for the preparation of a medicament for treatment of drug and/or alcohol abuse.
- 10 64. Use of at least one compound of the general formula I according to claims 1 to 45 for the preparation of a medicament for treatment of diarrhoea.
- 15 65. Use of at least one compound of the general formula I according to claims 1 to 45 for the preparation of a medicament for treatment of gastritis.
- 20 66. Use of at least one compound of the general formula I according to claims 1 to 45 for the preparation of a medicament for treatment of ulcers.
- 25 67. Use of at least one compound of the general formula I according to claims 1 to 45 for the preparation of a medicament for treatment of cardiovascular diseases.
- 30 68. Use of at least one compound of the general formula I according to claims 1 to 45 for the preparation of a medicament for treatment of urinary incontinence.
69. Use of at least one compound of the general formula I according to claims 1 to 45 for the preparation of a medicament for treatment of depression.

70. Use of at least one compound of the general formula I according to claims 1 to 45 for the preparation of a medicament for treatment of states of shock.
- 5 71. Use of at least one compound of the general formula I according to claims 1 to 45 for the preparation of a medicament for treatment of migraines.
- 10 72. Use of at least one compound of the general formula I according to claims 1 to 45 for the preparation of a medicament for treatment of narcolepsy.
- 15 73. Use of at least one compound of the general formula I according to claims 1 to 45 for the preparation of a medicament for treatment of excess weight.
- 20 74. Use of at least one compound of the general formula I according to claims 1 to 45 for the preparation of a medicament for treatment of asthma.
- 25 75. Use of at least one compound of the general formula I according to claims 1 to 45 for the preparation of a medicament for treatment of glaucoma.
76. Use of at least one compound of the general formula I according to claims 1 to 45 for the preparation of a medicament for treatment in cases of hyperkinetic syndrome.